

Source Water Assessment Program (SWAP) Report

For

Setra Systems, 155 Swanson RD.



Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

<i>PWS NAME</i>	SETRA SYSTEM
<i>PWS Address</i>	155 SWANSON RD.
<i>City/Town</i>	BOXBORO
<i>PWS ID Number</i>	2037024
<i>Local Contact</i>	RICH HUNT
<i>Phone Number</i>	(978) 486-3395

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	2037024-01G	158	454	High
Well #2	2037024-02G	183	479	High

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? inventory land uses within the recharge areas of all public water supply sources;
- ? assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? publicize the results to provide support for improved protection.

Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contaminant, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contaminant, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The facility gets its water from two wells. Well #1 (01G) is located on the sidewalk in front of the on-site building, well #2 (02G) is located in the woods on the side of the on-site building. Well #1 has a Zone I of 158 feet and an Interim Wellhead Protection Area (IWPA) of 454 feet, and well #2 has a Zone I of 183 feet and IWPA of 479 feet. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

The wells serving the facility have no treatment at this time. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate activities in Zone I;**
2. **Hazardous material use and storage;**
3. **Septic system;**
4. **Landscaping and lawn care;**
5. **Transportation corridor; and**
6. **Stormwater drain.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA.

4. **Zone Is** - Currently, the wells do not meet DEP's restrictions, which only allow water supply related activities in Zone I. The facility's Zone Is contain a portion of the on-site building (used for industrial purposes), parking areas, flower beds (landscaping & lawn care) and stormwater drains. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements. Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying their system.
- ✓ If the facility intends to continue utilizing the structures in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

5. **Hazardous material storage & use – Two sheds located on the property are used for the storage of petroleum, spray cans.** The building is used as a routing station for computers, and chemicals are used. In case of spills, leaks and improper handling the chemicals can potentially contaminate the water supply.

Recommendation:

- ✓ Use Best Management Practices (BMPs) to ensure the proper storage, handling, and disposal of on-site chemicals.

Table 2: Table of Activities within the Water Supply Protection Areas

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Industrial	Parking lot & road	Both wells	Both wells	Moderate	Limit road salt usage and provide drainage away from wells
	Hazardous material use & storage	01G	01G	High	Chemicals used in their every day activities.
	Floor drains	01G	Both wells	High	Two floor drains
	Septic System	No	Yes	Moderate	See septic systems brochure in the appendix
	Landscaping & lawn care	Both wells	Both wells	Moderate	Fertilizer & pesticide use
	Transportation corridor	No	01G	Moderate	Rt. 495
	Stormwater drains	Both wells	Both wells	Low	

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

3. **Septic system** - The septic system is located within the IWPA of the wells. The system is pumped once a year. If not properly maintained, septic systems can fail and potentially contaminate the water supply.

Recommendations:

- ✓ Staff should be instructed on the proper disposal of spent household chemicals. Include custodial staff, groundskeepers, and certified operator.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

1. **Landscaping and lawn care** - Flower beds are located within the Zone I and IWPA of both wells. Of concern is the use of fertilizers and pesticides. The Facilities Manager indicated that fertilizers are used sparingly. Fertilizer use within the Zone I is prohibited. If fertilizers leak, spill or are improperly handled, they can potentially contaminate the water supply.

Recommendations:

- ✓ Do not use fertilizers or pesticides in the Zone I.
- ✓ Use best management practices when applying fertilizer in the IWPA.

2. **Transportation corridor** - Route 495 is an interstate highway, which increases the chances of contamination from accidents or spills and road salt. It is located within the IWPA of Well #1.

Recommendation:

- ✓ Work with the local fire department to ensure that they include your IWPA in the Emergency Response Planning.

3. **Storm drains** - Approximately six storm drains are located within the Zone I and IWPA of the water supply. The town of Boxboro cleans the storm drains once a year. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

Recommendations:

- ✓ Continue to have the catch basins inspected, maintained, and cleaned on a regular schedule.

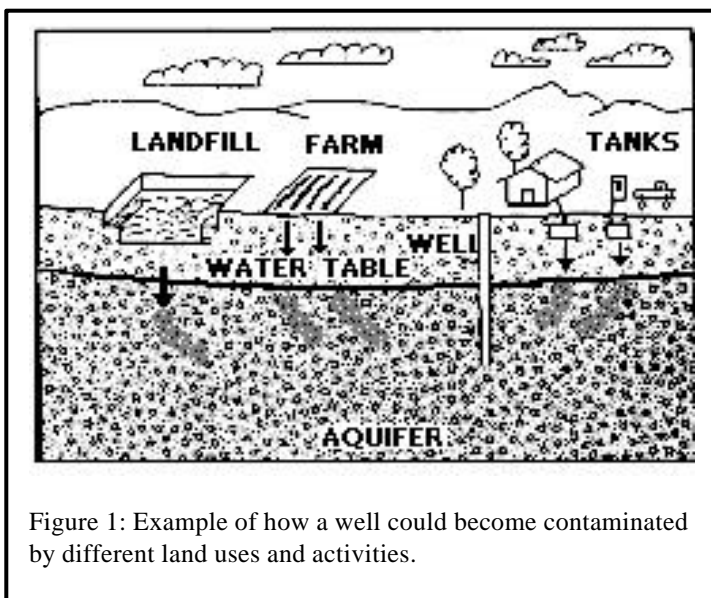


Figure 1: Example of how a well could become contaminated by different land uses and activities.

- ✓ Consider nonstructural techniques such as parking lot sweeping to reduce the amount of potential contaminants in storm water runoff. Additionally, the public water supplier may want to consider structural BMPs (e.g. stormwater swale, detention basin, etc.) as part of comprehensive storm water management plan for the site (refer to Storm Water Management Handbook, Volume 1 and 2 for information on BMPs). Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Setra Systems should review and adopt the following recommendations at the facility:

For More Information:

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 4030** for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at:
www.state.ma.us/dep/brp/dws.

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

Zone I:

- ✓ Consider well relocation if Zone I threats cannot be mitigated. Please note that DEP Permit Approvals must be obtained prior to the installation of a new well
- ✓ Work with your community to ensure that stormwater runoff in the IWPA is directed away from the well and is treated according to DEP guidance.
- ✓ Do not use pesticides, fertilizers or road salt within Zone I.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property

Planning:

- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet
- Industrial Floor Drains Brochure

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix